What is claimed is:

1. A system comprising:

a forward error correction encoder that encodes a first signal to produce a second signal;

an interleaver that interleaves the second signal to produce a third signal;

a transmission system used to transmit the third signal;

a de-interleaver that de-interleaves the third signal and a possible error signal combined with the third signal to produce a fourth signal, such that any burst of the error signals is spread out; and

a forward error correction decoder that decodes the fourth signal to produce a fifth signal.

2. The system of claim 1, wherein the interleaver comprises a multiplexer.

3. The system of claim 1, wherein the de-interleaver comprises a de-multiplexer.

4. The system of claim 1, wherein the first signal and second signal comprise multi-dimensional data.

5. The system of claim 1, wherein the interleaver forms the third signal using a sequential interleaving pattern.

6. The system of claim 1, wherein the interleaver forms the third signal using a random interleaving pattern.

7. The system of claim 1, wherein the transmission system comprises first and second transceivers that transmit and receive the third signal and the possible error signal over one of a wire or a wireless transmission medium.

8. The system of claim 1, wherein the transmission system comprises first and second frequency domain multiplexed transceivers that transmit and receive the third signal and the possible error signal over one of a wire or wireless transmission medium.

9. The system of claim 1, wherein the transmission system comprises first and second time domain multiplexed transceivers that transmit and receive the third signal and the possible error signal over one of a wire or wireless transmission medium.

10. The system of claim 1, wherein the transmission system comprises first and second frequency domain-time domain multiplexed transceivers that transmit and receive the third signal and the possible error signal over one of a wire or wireless transmission medium.

11. The system of claim 1, wherein the third signal and the possible error signal are transmitted over one of a wire or wireless transmission medium.

12. The system of claim 1, further comprising:

a first multiplexer that produces a plurality of first signals; and

a second multiplexer that produces the fifth signal from a plurality of fourth signals,

wherein the encoding FEC and the decoding FEC include a plurality of encoding FECs and a plurality of decoding FECs, a number of each corresponding to a number of the plurality of first signals,

wherein the possible error signals are spread over the plurality of fourth signals.

13. The system of claim 12, wherein the transmission system comprises a plurality of channels corresponding a number of the plurality of the first signals.

14. The system of claim 13, wherein the plurality of channels have substantially equal signal-to-noise ratios.

15. The system of claim 1, wherein the transmission system comprises an encoder and decoder to provide a concatenated encoding scheme.

16. A system comprising:

a two-stage multiplexing system;

a two-stage interleaving system, wherein each stage of the interleaving system is positioned subsequent to a corresponding stage of the multiplexing system;

a transmission system coupled between a second stage of the interleaving system and a first stage of a two-stage de-interleaving system;

a two-stage de-multiplexing system, wherein each stage of the de-multiplexing system is positioned subsequent to a corresponding stage of the de-interleaving system.

17. The system according to claim 16, wherein:

a first stage of the multiplexing separates a multi-dimensional input signal into each of its dimensions;

a first stage of the interleaving system interleaves each dimension of the input signal to form second signals;

a second stage of the multiplexing system distributes each bit of the second signal to one of a plurality of frequency tones; and

a second stage of the interleaving system interleaves each of the frequency tones of each of the second signals to form a transmission signal.

18. The system according to claim 17, wherein:

a first stage of the de-interleaving system de-interleaves each of the frequency tones of each of the transmission signals and possible error signals combined with the transmission signals during transmission to form third signals;

a first stage of the de-multiplexing system combines all the frequency tones for each dimension of the third signal to form a fourth signal;

the second stage of the de-interleaving system de-interleaves each of the fourth signals to form fifth signals; and

a second stage of the de-multiplexing system combines the fifth signals to form a sixth signal.

19. A method comprising:

(a) encoding a first signal with a forward error correction code to produce a second signal;

(b) interleaving the second signal to produce a third signal;

(c) transmitting the third signal using a transmission system;

(d) de-interleaving the third signal and a possible error signal combined with the third signal to produce a fourth signal; and

(e) decoding the forward error correction code associated with the fourth signal to produce a fifth signal.

20. The method of claim 19, wherein step (a) further comprises:

(a1) using a multi-dimensional signal as the first signal;

(a2) directing each dimension of the multi-dimensional first signal along a separate conductor; and

(a3) encoding each dimension of the multi-dimensional first signal, wherein steps (b)-(d) are performed for each dimension.

21. The method of claim 19, wherein step (c) comprises:
encoding the third signal to produce an encoded third signal;
transmitting the encoded third signal; and
decoding the encoded third signal to reproduce the third signal.